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ISD News and Views

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State of Montana Data Center Study

Real Decisions Corporation has recently completed its evaluation of the State of Montana's central data center. Real Decisions is a corporation that specializes in analyzing and evaluating Information Technology (IT) operations and efficiencies. Real Decisions has developed an evaluation methodology that provides an accurate, unbiased basis on which to make cost performance comparisons of the IT function. Comparisons are made to peer groups based upon industry, size, and workload attributes. The group of Real Decisions participants is now in excess of 250 companies, including other state governments as well.

The results of the Real Decisions cost analysis study indicated that the State of Montana provides its data center customers with products at lower than average costs. The State's NOW Index, (which measures the overall cost per unit of work) is 9% lower than the average Real Decisions study participant, 42% lower than similarly sized facilities, and 12% lower than the average of the government client group.

The study shows that the State of Montana has done an excellent job of managing the costs of the data center in terms of hardware, software, and personnel. The challenge is to continue providing quality service to the growing customer base while holding unit costs to a minimum.

Fiber Backbone Status

Last summer ISD contracted to have fiber optic cable laid between buildings on the campus. We have just recently completed "lighting up" the fibers dedicated to data networking and, in

particular, token ring. This means we now have a 16MB token ring backbone. The fiber backbone ring goes to the following buildings in sequence:

1. Mitchell Building
2. Labor & Industry Building
3. Cogswell Building
4. S.R.S. Building
5. Justice/State Library Building
6. DNRC
7. Teachers Retirement Building
8. Fish, Wildlife, and Parks Building
9. Scott Hart Building
10. Historical Society Building
11. Capitol Building

Currently the 16MB fiber backbone is connected to the old 4MB copper backbone via a Cisco router located in the Mitchell Building. ISD is planning to move all current copper backbone users to the fiber backbone during the next three to six months. The conversion will be done building by building. When a building is moved over to the fiber backbone, it will experience a short outage. Other users already converted over to fiber will not experience any outage. The fiber backbone is just another example of ISD's efforts to provide higher performance and more reliable data networking solutions to meet the needs our user community.

Questions may be forwarded to Terry Kramer, 444-2556, or Carl Hotvedt, 444-1780.

Management Information Systems Services

Requests for proposals for management information systems (MIS) services have recently been sent. This term contract will provide additional MIS services to State agencies.

For example, term contract programmer/analysts could be utilized for a large programming project for which you have insufficient staff. This term contract also will make available a consultant to assist with administrative and staff support activities. This service will be optional for State agencies. If you are interested in this service and would like more information, please call Brett Boutin at 444-0515.

Year End Purchasing Deadlines

If you are buying computing equipment from a term contract, ISD will continue to process purchase orders received through June 25th.

However, if your agency is affected by the language in HB 0003, ISD suggests you submit your paperwork much earlier in order to assure the order can be processed and products received prior to the end of the fiscal year.

At least one microcomputer term contract holder is experiencing availability problems with some products and may not be able to assure that the orders will not result in type "A" accruals.

If you are planning to order from the term contracts in the next two months, ISD suggests that you communicate with the selected vendor as soon as possible to find out about the availability of the product you have selected. Doing so will allow you enough time to revise your purchase plans accordingly if delivery dates cannot be met.

Power Protection/UPS

If your agency depends heavily on computer systems for vital operations, you are vulnerable to environmental hazards of your area as well as power line problems common of all electrical installations. Your power source needs to feed clean, regulated power to your computer systems in order to keep data and systems safe. Sudden electrical disturbances can cause serious damage to computer equipment. You should seriously consider power protection for your systems.

There are currently many power protection products available, which can be divided into four categories: surge suppressor, power-conditioning uninterruptible power supply (UPS), battery backup UPS, and "smart" UPS.

A surge suppressor protects against transient voltage, primarily due to thunderstorm activity. The surge suppressor is best for small desktop computer systems or standalone stations. Typically you can plug in up to seven devices on the surge suppressor. These range in cost from $15 to $210.

A power-conditioning UPS will regulate, or level, incoming AC voltage to within the safe limits of computer operation. These are best for small 386 and 486 systems and laser printers. They cost about $180 to $280.

A battery backup UPS protects your system from power outages (brownouts and blackouts) and power surges, and also will condition the power. The UPS battery backup protection is best for small to mid-sized systems, including file servers. They usually range in capacity from 250VA to 900VA. VA means Volt Amps, which is equal to the number of amps in your system times 1.4. For example, if your computer is 200 amps, then VA needed would be 280. These UPS's cost between $100 and $1000.

The "smart" UPS's will condition the power source, which entails converting the electrical input into a "continuous sine wave" output (this is a good thing). The reason they are "smart" is that they utilize an invertor that basically acts as a battery charger during normal operation. These will monitor and log the site power quality, helping to diagnose chronic power problems. They can monitor the computer room environment, and make adjustments to provide the ultimate environment. Software can be purchased for this UPS that will monitor and automatically shut down Novell. For example, if power goes out, the UPS will kick in, and the software will warn the Novell users that "power has gone down, you have 10 minutes to save your application and log out". A UPS of this caliber, which handles 250VA to 2000VA, will cost anywhere from $300 to $2400. These can be utilized for personal desktop systems to minicomputers and large systems with multiple servers.

UPS's are now available through the microcomputer term contract. DEC presently has four available on their price list, and we are waiting for IBM and Dell to place UPS's on the term contract as well. (You can order them from the magazines until then.)

The result of adding a UPS to your system is clean, reliable power that can increase your computer's operating life, reduce downtime and maintenance calls, and protect one of your biggest assets. Contract Brett for any concerns you may have regarding UPS's.

Term Contract Status

Microcomputers

DOWN DOWN DOWN!!! DEC, Dell, and IBM have reduced prices yet again for several products. You'll note that all 386 systems and the low end 486 systems are currently offered at excellent prices. The 386's are hard to come by, though, as they are being phased out. Several of the notebooks have been drastically reduced, also. The notebook prices will continue to go down, as the vendors will soon be introducing 486-based models.

Besides price reductions, there have been several product additions and changes. Term contract price lists will be distributed, upon request, through Zip!Mail. If you would like to be on the price distribution list, or have any questions concerning the latest prices or products, please call Brett at 444-0515.

All new products on the lists have been approved, contingent upon vendor certification of compatibility. Agencies should be aware that ISD has not rigorously tested many of these products. We will work with you if there are compatibility problems that need to be resolved with the vendor. Also, if you need to expedite an order in an emergency situation, we will assist where possible.

Microcomputer Maintenance

IBM has announced that they've signed a technical support agreement with Kingston Technology Corporation to provide support for Kingston products. The agreement allows IBM Customer Service Engineers (CE's) to provide on-site service for the full range of Kingston's compatible memory, processor, and storage upgrades.

All Kingston products installed in IBM PC products, RISC System/6000 workstations, IBM printers, or Lexmark printers will be covered for one year from the date of purchase in eligible products under IBM warranty or covered by an IBM maintenance agreement. Kingston products installed in Compaq systems, Apple systems, or Hewlett Packard printers are also included in this agreement.

IBM recently increased the maintenance charge on some of the monitors on the contract (models 5151, 5153, 8503, 8512, 8513). These prices went up because these monitors are getting old, nearing the end of their useful life, and it costs more to maintain them. Agencies with these items currently under maintenance should assess the increased maintenance cost (when it comes due again) compared to the cost of a replacement program. A DPMG subcommittee will be formed to address this topic in general.

To place equipment under maintenance, fill out the maintenance request form and attach it to a purchase order. Send it directly to IBM at 100 N. Park Ave., Helena, MT 59601.

If you have any questions about the maintenance contract with IBM, please call Brett at 444-0515. The latest version of the maintenance contract (with new prices) and/or the maintenance request form will be sent by Zip!-Mail upon request.

Mainframe

Just for CICS!

Have you ever been annoyed at temporarily having to leave one CICS application to bring up another? Does your work require you to use multiple CICS applications? Would you like to be able to suspend one application, temporarily bring up another, and then get back to the first at the touch of a single key? If you answered yes to any of the above questions, then CICS-Juggler may be the solution you are looking for.

CICS-Juggler is a third-party product that allows a terminal attached to CICS to suspend a current application and start up to eight additional applications. The terminal user may then "juggle" between applications via either predefined or user-selected "hot" keys.

Start CICS-Juggler by selecting the "Activate CICS Juggler" option from your CICS menu or by entering the transaction "JUGO" from a blank CICS screen. In either case, you will be prompted for the number of sessions (two through nine), and a toggle or hot key (select a PF or PA key that you will not use for any of your applications). Once you have entered your choices, you will either be returned to your CICS menu or a status message from CICS-Juggler will be displayed. From this point merely pressing your toggle key will save your current application and take you to a new screen where you may initiate or resume alternate applications. Pressing the toggle key again will take you sequentially through all of your alternate sessions.

Although CICS-Juggler may seem like a wonderful productivity tool, it is not free. There is a small amount of additional CPU time added to your existing applications by having CICS-Juggler active on your terminal. Additionally, each time the user presses their toggle key, this invokes a special CICS transaction to save the current application and restore an alternate one. These costs are predictable and may be factored into an agency's budget. This may also mean that an agency may decide to limit the use of CICS-Juggler to those users who really need it.

Specific information on the cost of using CICS-Juggler is available on request. Access to CICS-Juggler may be obtained by contacting Glen Stroop at 444-2910 or Gary Poepping at 444-2811 in the Application Services Bureau.

--Donald Grinsell, Technical Services Section

RBase 3.1/4.0 Question and Answer Database

Microrim has supplied us with a database containing over 250 of the questions most frequently asked of their Customer Support Center (and the associated answers/solutions to those questions). It comes in the form of a RBase application that provides easy access to the questions and answers.

You get a diskette with two files on it: README.DOC containing instructions for setting up the application, and ANSWERS.EXE, a self-extracting compressed file that contains all the databases and application files. It is available on 3½" 720k diskettes or 5¼" 360k diskettes.

If you would like a copy of this database and application, please contact either Denny Knapp (444-2072) or Irv Vavruska (444-2858), both of End User Computing.

Capturing Screens in Windows 3.1

Do you ever wish you could include a picture of your Windows session in word processing documents, perhaps to document a process you are working on? With Windows 3.1 it is easy to do, and free. You do not need to purchase a third-party piece of software--everything you need is already a part of Windows.

Get your Windows screen just the way you want it and press PRINT SCREEN. (If you have multiple windows open but want to capture only the active one, try pressing ALT while pressing PRINT SCREEN. This should work for most configurations to capture only the active window.) Now start the PAINTBRUSH program that comes with Windows. Click on the OPTIONS menu item, and then click on IMAGE ATTRIBUTES. Click on the "pels" button and set the width and height to the resolution of your video screen--i.e. 640 by 480. (See the illustration below in figure 1, which was captured using this process we are discussing.) Click on OK.

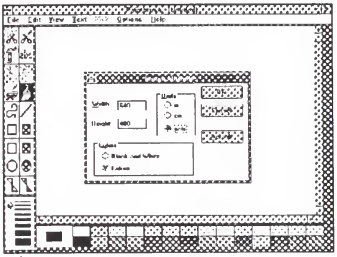

Figure 1

Click on the VIEW menu option, then click on ZOOM OUT. Click on the EDIT menu option, then click on PASTE. At this point a cross-hatch pattern will appear where your captured screen will soon be. Click in the grey area to the left of the cross-hatch pattern and your captured screen will appear in a minimized form. Click on ZOOM IN.

You can now save this image for use in your word processor by clicking on the FILE menu option, clicking next on SAVE AS, and filling in the necessary information before clicking on OK. Remember that if you save the image in PCX format it can be imported directly into a graphics box in WordPerfect.

If you have questions about this article or about Windows in general, contact Denny Knapp of End User Computing, at 444-2072.

VISIO-Shapeware Corporation

Visio is a windows graphics program which provides ready-made stencils of shapes specific to different tasks (e.g., flow diagrams, business models, organizational charts, network layouts, etc.), that can be used much as plastic stencils are used with pen and paper. You simply click (with a mouse) on shapes from the stencils, drag them to Visio's drawing areas, and drop them into place. This drag-and-drop operation makes drawing simpler than most kinds of drawing and illustration software. Objects can also be connected to each other to ensure

continuity and provide the ability to accurately scale drawings with floating point precision. For more information or product information, contact Jerry Kozak with End User Computing at 444-2907.

Try WordPerfect 5.1 Tables for Parallel Columns

Using a table to create parallel columns gives you the advantage of seeing the division between columns. When a table is defined, a graphics line is displayed that divides your "columns". The table allows you to actually see the boundaries of your "columns". Just remember to turn off graphics lines in the table before printing.

To create a table:

(1) Press Columns/Tables **(ALT+F7)**

(2) Select **Tables (2)**

(3) Select **Create (1)**

(4) Enter **2** for Number of Columns

(5) Enter **1** for Number of Rows

(6) Press **(F7)** to exit the table editor

You now have a 2 X 1 table or two columns. As you enter text into the table, the cursor will move to the next line when reaching the end of the cell or column, expanding the size of the table as you go. To move between the cells or columns of the table, simply press the **TAB** key. Likewise to move back to the first cell or column press **BACK TAB (SHIFT+TAB)**.

When you are ready to print your document, you may quickly and easily turn off all graphics lines in the table by:

(1) Pressing Print **(SHIFT+F7)**

(2) Graphics Quality **(G)**

(3) Do Not Print **(1)**

If you have any questions concerning WordPerfect Tables/Columns or WordPerfect please call Kyle Wynn at 444-2859 or Sue Skuletich at 444-1392, both of End User Computing.

Printing in Novell Using Lotus Software

As more agencies are setting up Novell networks and are wanting to print to network printers using Lotus 1-2-3, some printing questions need to be answered. Many have noticed that bizarre characters appear on their printouts, and others have noticed that fonts have changed, or that the layout isn't the same as when they previewed the document. Most of these problems can be corrected simply by taking a quick look at the CAPTURE statement. Lotus Corporation recommends that you use the /No Tabs parameter in the CAPTURE statement as well as having the /TImeout= parameter set between 45 and 90. Setting these two parameters will solve many, if not all, of the printing problems you may be experiencing.

Another useful item is to capture several network printers and/or a local printer using the /Local= parameter before you start Lotus 1-2-3. (/Local=1 stands for LPT1, /Local=2 stands for LPT2, etc.) Then, once the user starts 1-2-3, all they need to do is choose /Worksheet Global Default Printer Name (and select the correct printer driver), and then choose Interface (and select the correct interface, usually DOS Device LPT1, DOS Device LPT2, or DOS Device LPT3, depending on which port was captured in the CAPTURE statement). This way, the user has a choice of several printers to print to when they are in 1-2-3.

Following is a sample CAPTURE statement using the above mentioned parameters. You will also need to include any other parameters you wish to use.

CAPTURE /Local=1 /No Tabs /TImeout=60

Please note that these tips are useful for Lotus Freelance as well as Lotus 1-2-3.

Please contact your Network Administrator for help in setting up CAPTURE statements, or to determine if your agency has a standard in selecting printers. If you have any questions about

printing using Lotus products on a Novell Network, please call Irv Vavruska at 444-2858, or Jerry Kozak at 444-2907, both from End User Computing.

First Looks

First Looks is a new feature of *News and Views*. ISD will be evaluating new hardware and/or software products in the marketplace. We will not be formally recommending or supporting the products that appear in this column, but will be sharing our findings with the readers of *News and Views*.

Calendar of Events

May 12th — Data Processing Managers' Group (DPMG) meeting. Call Chairperson Tripp Hammer at 444-4486 for agenda information.

End Notes

Submit Articles

Although *News and Views* is published by ISD, it is not intended to contain ISD information only. We would like for you to share your projects or any other item of interest that you may have. We are also looking for any ideas to add to the newsletter--such as games, puzzles, trivia, etc. If you would like to submit an article to *News and Views* for publication, please send it to Brett Boutin or Dan Mossman (preferably through Zip!Mail). The following schedule provides the dates that articles must be received by in order to be published in the issues listed below:

June Issue	05/14/93
July Issue	06/11/93
August Issue	07/14/93

ISD Network Assistance Center 444-2000

Have a problem? Need ISD assistance or support for any of your information processing needs--either voice or data? The central contact point is the ISD Network Assistance Center.

975 copies of this public document were printed at a cost of $264.
Distribution costs are $18.25.
18 copies of this document were distributed through electronic mail at no cost.

Editors: Brett Boutin & Dan Mossman

Training Information

All classes will be held in the Training Room in the basement of the Teachers Retirement Building at 1500 6th Ave., unless another location is specified. There is a limit of 12 participants per paid class and 20 participants per demonstration (free) class, unless otherwise announced. The cost of classes is shown below. Please note that these costs are subject to change each July 1st.

To enroll in a class, **you must send an enrollment application** to the Department of Administration, ISD, Application Services Bureau, Mitchell Building, Helena, MT 59620-0113. If you have questions about enrollment, please call 444-3987. *Once you enroll in a class, the full fee will be charged UNLESS you cancel at least three business days before the first day of class.*

The classes available and their costs are as follows:

Class Name	Cost	Length in Days
*MVS\ESA - Differences from MVS\XA	FREE	¼
*Introduction to TSO/SPF	$ 80.00	1
*Introduction to JCL (Job Control Language)	320.00	4
*Introduction to CICS Programming	**	5
*Introduction to IDMS Database Programming	**	5
*IDMS ADS/Online	**	5
*Introduction to CULPRIT	240.00	3
*Subscripting in CULPRIT	FREE	¼
*CULPRIT Programming for IDMS	160.00	2
*Introduction to SAS: Module 1	20.00	¼
Module 2	20.00	¼
Module 3	200.00	2½
*Novell Network Administration	160.00	2
*Novell NetWare System Manager	**	3
*Novell NetWare Advanced System Manager	**	3
*Novell Netware Service & Support	**	5
*PC Memory Management Options and Considerations	FREE	¼
*Windows Purchase, Installation and Use Considerations	FREE	¼
*Windows for the Technical Support Team	**	2
Beginning Microcomputer Skills	80.00	1
Fundamentals of DOS	80.00	1
*Intermediate DOS	80.00	1
*Introduction to Novell Networks	40.00	½
*Introduction to Windows	80.00	1
CorelDraw	80.00	1
CA-Docview	FREE	¼
Introduction to Quickref	FREE	¼
Introduction to WordPerfect (5.0 or 5.1)	120.00	1½
*Advanced Features of WordPerfect 5.0	120.00	1½
*WordPerfect (5.0 or 5.1) Complex Document Functions	40.00	½
*More WordPerfect (5.0 or 5.1) Complex Document Functions	40.00	½
*WordPerfect 5.1 Tables	40.00	½
*WordPerfect 5.1 Columns and Math Functions	40.00	½
*WordPerfect 5.1 Graphics	80.00	1
*WordPerfect Merge and Sort Functions	40.00	½

*WordPerfect 5.1 Macros	80.00	1
*WordPerfect 5.1 Tips and Tricks	FREE	¼
*Conversion from WordPerfect 5.0 to 5.1	FREE	¼
*Spreadsheet Design and Documentation	80.00	1
*Conversion from Lotus 1-2-3 Rel. 2.2 to Rel. 3.1	FREE	¼
Introduction to Lotus 1-2-3, (Release 2.3 or 3.1)	160.00	2
*Intermediate Lotus 1-2-3, (Release 2.3 or 3.1)	80.00	1
*Lotus 1-2-3 WYSIWYG Features (Release 2.3 or 3.1)	40.00	½
*Lotus 1-2-3 Graphics (Release 2.3 or 3.1)	40.00	½
*Lotus 1-2-3, Release 3.1, 3-Dimensional Spreadsheets	40.00	½
*Lotus 1-2-3 Printing (Release 2.3 or 3.1)	40.00	½
Lotus 1-2-3 for Windows Conversion	FREE	¼
Freelance for Windows	80.00	1
Freelance for Windows - Conversion	FREE	¼
*Lotus 1-2-3 Macros (Release 2.2, 2.3, or 3.1)	160.00	2
*Introduction to Lotus 1-2-3 Database Features	160.00	2
Introduction to PFS:Professional File, Ver. 2.0	80.00	1
Micro Database Concepts and Design	80.00	1
Introduction to R:Base, Release 3.1	200.00	2½
*Advanced R:Base Release 3.1	160.00	2
*R:Base Query and Reports (Rel. 3.1)	80.00	1
*R:Base Views (Rel. 3.1)	FREE	¼
*Intermediate R:Base (Rel. 3.1)	160.00	2
State Telephone Training	FREE	¼
*Orientation to State's Computer Center	FREE	¼
Introduction to IBM's Library Reader	FREE	¼

* This class is not scheduled during the time covered in this issue.

Microcomputer Classes

BEGINNING MICROCOMPUTER SKILLS:

DATE:	June 21, 1993
TIME:	8:30 a.m. to 3:30 p.m.
PREREQUISITE:	None
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course will give participants brief hands-on experience with microcomputers. The following topics will be covered:

- The Machine
- The Operating System
- Word Processing
- Spreadsheets and Graphics
- File Management
- Communications

Most class time will be spent using microcomputers and software. This course helps develop a positive attitude toward using microcomputers and teaches their basic functions. This class--or its equivalent--is a prerequisite for our other microcomputer courses.

FUNDAMENTALS OF DOS:

DATE:	June 7, 1993
TIME:	8:30 a.m. to 3:30 p.m.
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

"Fundamentals of DOS" is intended for microcomputer users who need to know more about controlling the microcomputer through its operating system. Programming experience is NOT required. Topics to be covered include:

- What is DOS? Why is it necessary to know about it?
- DOS names for peripherals
- File naming
- Set-up files such as CONFIG.SYS
- Internal DOS commands - DIR, ERASE, RENAME, TYPE, COPY and their variations
- External commands - FORMAT, SYS, DISKCOPY, CHKDSK, MODE
- Interpreting batch files
- Backup procedures

INTRODUCTION TO PFS:PROFESSIONAL FILE, VERSION 2.0: presented by Irvin Vavruska of the Application Services Bureau

DATE:	May 20, 1993
TIME:	8:30 am to 4:30 pm
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

The PFS:Professional File software is an easy-to-use file management system. This course will give participants hands-on experience creating databases--demonstrating the flexibility of this software in storing, retrieving, and updating a large amount of related information.

LOTUS FREELANCE: presented by Irvin Vavruska of the Application Services Bureau

DATE:
TIME: 8:30 am to 4:30 pm
PREREQUISITE: Beginning Microcomputer Skills
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will give participants hands-on experience using Freelance to create many types of figures, drawings and graphs. Students will learn to use Freelance's symbol library and freehand drawing capabilities and to import data from Lotus 1-2-3 spreadsheets to create a publication-quality chart or graph.

FREELANCE GRAPHICS FOR WINDOWS CONVERSION: presented by Irvin Vavruska of the Application Services Bureau

DATE: June 8,, 1993
TIME: 9:00 a.m. to 11:00 a.m.
PREREQUISITE:
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will introduce users to Freelance for Windows. Students will obtain information regarding its features, abilities, and procedures for converting Freelance for Dos files.

FREELANCE GRAPHICS FOR WINDOWS: presented by Jerry Kozak of the Application Services Bureau

DATE: June 23, 1993
TIME: 8:30 am to 4:30 pm
PREREQUISITE: Beginning Microcomputer Skills
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will give participants hands-on experience using Freelance for Windows to create many types of figures, drawings, graphs and screen shows. Students will learn to use Freelance's symbol library and freehand drawing capabilities and to link data from Lotus 1-2-3 spreadsheets to create a publication-quality chart or graph.

CORELDRAW 3.0 FOR WINDOWS: presented by Jerry Kozak of the Application Services Bureau

DATE: May 26, 1993
TIME: 8:30 a.m. to 4:30 p.m.
PREREQUISITE: Familiarity with DOS and Windows
LOCATION: Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will give new users an overview of CorelDraw its features and abilities. CorelDraw is made up of six components: CorelPHOTO-PAINT, CorelMOSAIC, CorelTRACE, CorelDRAW, Corel-CHART, and CorelSHOW. Students will learn to create and edit graphic figures, boxes, lines, charts and photographic images through hands on exercise. These abilities will then be combined to produce a basic slide show. This course is tailored for the beginning windows graphic user. Additional and more advanced classes will be scheduled for each component of the Corel system.

Word Processing Classes

INTRODUCTION TO WORDPERFECT:

DATES:	June 28 and 29, 1993 July 29 and 30, 1993
TIMES:	8:30 a.m. to 3:30 p.m. on first day 8:30 a.m. to noon on second day
PREREQUISITE:	Beginning Microcomputer Skills or equivalent
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is a generic introduction to WordPerfect for new users of release 5.0 or 5.1. Experience with WordPerfect is not necessary. Participants will go through the fundamentals of creating, formatting, editing and printing documents. Some advanced features will also be covered, including checking spelling, finding a word or phrase, marking blocks of text, moving text and listing/retrieving document files.

Spreadsheet Classes

INTRODUCTION TO LOTUS 1-2-3, RELEASE 2.3 OR 3:

DATES:	June 14 & 15, 1993 July 7 & 8, 1993
TIMES:	8:30 a.m. to 4:30 p.m. each day
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is a generic introduction to Lotus 1-2-3 for persons with little or no Lotus experience. It will consist of instructions and hands-on practice, with lab time available for building spreadsheets of the participants' choosing.

The class will cover design, creation, printing and editing of spreadsheets. Additional topics will include selected graphic features, the use of formulae to connect spreadsheets, and the opening of multiple files at the same time. Students will learn about new WYSIWYG (What You See Is What You Get) features of Releases 2.3 and 3.1 such as enhanced printing of spreadsheets and graphs.

CONVERSION TO 1-2-3 FOR WINDOWS, RELEASE 1.1: presented Irvin Vavruska of the Application Services Bureau

DATE:	May 17, 1993 June 17, 1993
TIME:	9:00 a.m. to 11:00 a.m.
PREREQUISITE:	Lotus 1-2-3, knowledge of Windows is helpful
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This course is designed for anyone who has converted, or is planning to convert, to Lotus 1-2-3 for Windows Release 1.1. It consists of lecture and hands-on practice. The class covers features which are new to 1-2-3 for Windows as well as features which have changed from the DOS version. Some topics which will be discussed are Automatic Print Compression, Print Preview, 1-2-3 Classic menu, Graph Gallery, Solver and BackSolver, Dynamic Data Exchange (DDE), access to the Windows clipboard, greater flexibility in debugging macros, adding documentation to complex formulas, as well as worksheet and macro compatibility. SmartIcons and SmartPak options will also be discussed. These include AutoSum, SmartFill, SmartFormat, 3-D Sum, Centering Over Columns, and Zoom. Wysiwyg features which will be discussed include creating high quality reports by combining text, data, graphs, and styles, and enhancing graphs with drawing tools.

Database Classes

MICRO DATABASE CONCEPTS AND DESIGN: presented by Denny Knapp of the Application Services Bureau

DATE:	July 13, 1993
TIME:	8:30 a.m. to 4:30 p.m.
PREREQUISITE:	Beginning Microcomputer Skills
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class is designed to give participants a preliminary understanding of what a relational database is and how it compares to other products like Lotus 1-2-3 and PFS:Professional File. The class teaches database design techniques and is a prerequisite for other database classes offered by ISD.

INTRODUCTION TO R:BASE, RELEASE 3.1:

DATES:	July 14, 15 and 16, 1993
TIMES:	8:30 a.m. to 4:30 p.m. on first and second days 8:30 a.m. to noon on third day
PREREQUISITE:	Beginning Microcomputer Skills, Micro Database Concepts and Design and Fundamentals of DOS
LOCATION:	Basement of the Teachers Retirement Bldg. at 1500 6th Ave.

This class will give participants hands-on experience creating a database and developing a simple application with R:Base 3.1. The application will include database updates, queries, and simple form and report generation. The R:Base menu system will be used to develop the application. This class will not cover the R:Base command mode or programming other than menu system application development.

ISD CLASS ENROLLMENT APPLICATION
*COMPLETE THIS APPLICATION **IN FULL** AND*
RETURN IT TO ISD'S APPLICATION SERVICES BUREAU
__ONE WEEK PRIOR__ TO THE FIRST DAY OF CLASS

COURSE DATA
Course Requested: _____
Date Offered: _____

STUDENT DATA
Name: _____
Soc. Sec. Number (for P/P/P): _____
Agency **&** **Division**: _____/_____
Mailing Address: _____
_____
Phone: _____
How have you met the required prerequisites for this course? Explain, giving the class(es) taken, tutorial(s) completed, and/or experience.
_____
_____
_____

BILLING INFORMATION/AUTHORIZATION **MANDATORY**
ISD Billing Number (5 digits): _____
Authorized Signature: _____

FULL CLASS FEE WILL BE BILLED TO THE REGISTRANT UNLESS CANCELLATION IS MADE THREE BUSINESS DAYS BEFORE THE START DATE OF THE CLASS.

SEND COMPLETED FORM TO:
ISD APPLICATION SERVICES BUREAU, DEPARTMENT OF ADMINISTRATION

DEPARTMENT OF ADMINISTRATION
INFORMATION SERVICES DIVISION
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